

**LISTING OF CLAIMS:**

Claims 1 - 19 (canceled)

20. (New) A stack management system for a computer system for executing operations involved in issued instructions to be applied to an operand stack out of order, comprising:

- a register file having entries each designed to be able to hold a word of data;

- an advanced pointer stack having entries each designed to be able to hold an entry address in said register file, said advanced pointer stack being adapted, in combination with said register file, to virtually configure a state of the operand stack / uppermost part of the operand stack based on all issued instructions;

- a completed pointer stack having entries each designed to be able to hold an entry address in said register file, said completed pointer stack being adapted, in combination with said register file, to virtually configure a state of the operand stack / uppermost part of the operand stack based on all completed instructions;

- a data buffer constructed as a circular buffer having entries each designed to be able to hold a word of data; and

- a data cache, wherein:

- in case that the bottom entry of said advanced pointer stack and the bottom entry of said completed pointer stack hold an entry address in said register file, a word of data held in the entry of said register file of said entry address can be split into said data buffer, with both the hold of said entry address at the bottom of said advanced pointer stack and the hold of said entry address at the bottom of said completed pointer stack removed;

- said register file can be filled with a word of data from said data buffer by allocating a free entry of said register file to said word of data, writing said word of data into said entry of said register file, and having both the entry under the bottom

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of said advanced pointer stack and the entry under the bottom of said completed pointer stack hold the address of said entry of said register file; and

spill/fill operations can be performed between said data buffer and said data cache.